

EXPRESS MAIL LABEL NO. EV 318164161 US

[0001] CLEANING DEVICE

[0002] BACKGROUND

[0003] This invention pertains to a cleaning device with a distributing surface to effect a flat distribution of a cleaning or disinfectant fluid, and with a fluid outlet that is connected via a fluid line to a fluid reservoir containing a cleaning or disinfectant fluid.

[0004] From DE 100 40 014 A1 by this applicant, there exists a prior art cleaning device that has a distributing surface connected to a handle for the surface distribution of a cleaning or disinfectant fluid. The prior art cleaning device has a supply container that can be filled with cleaning or disinfectant fluid and which is designed as a pressure vessel and can be pumped using a hand pump under positive pressure. By activating a discharge mechanism that is installed in an outlet line connected to the supply container, the cleaning or disinfectant fluid is forced out of the supply container. In the process, the outlet opening of the outlet line, which serves as a spray opening, is directed at the portion of the floor directly in front of the distributing surface.

[0005] The portion of the cleaning or disinfectant fluid that flows out through the spray opening of the outlet line is applied to the floor as a relatively small circular spray pattern, and can then be distributed there by means of the distributing surface.

[0006] However, the surface distribution of the cleaning or disinfectant fluid exiting the spray opening requires an additional amount of time and work.

[0007] SUMMARY

[0008] Therefore, the particular objective is creating a cleaning device of the type mentioned above that makes the application of cleaning or disinfectant fluid an even faster and easier process, with the device still being easy to manufacture.

[0009] The solution of this objective according to the invention is to structure the cleaning device of the above mentioned type in such a manner that the fluid outlet becomes a spray strip that has a number of outlet openings distributed along the length of the strip and such that the spray strip can be fastened removably to the cleaning device.

[0010] The cleaning device according to the invention has a fluid outlet in the form of a spray strip. Since this spray strip has numerous outlet openings distributed along the length of the strip, the cleaning or disinfectant fluid can be applied not as a circular pattern only, but in a linear or even surface pattern. This makes the work required to distribute the cleaning or disinfectant fluid significantly less time-consuming and easier. Moreover, this prevents the formation of any clouds of spray, which can cause allergic reactions, and saves chemicals and water during the cleaning of the surfaces involved. Since the spray strip is fastened removably to the cleaning device, it is possible to attach it to and remove it from the cleaning device simply and easily.

[0011] A preferred embodiment of the invention is one in which the spray strip is connected to the cleaning device via a snap-on or clip connection. A spray strip of this type that can be connected to the cleaning device via a snap-on or clip connection can be especially simple and easy to fasten.

[0012] An embodiment according to the invention with a simple design and that is easy to manufacture provides that at least one fastener is provided on the spray strip and/or the distributing surface, with the fastener being able to be connected removably to the distributing surface or the spray strip.

[0013] To this end, one embodiment according to the invention provides at least two separate fasteners designed in particular as snap-on connections on the flat side of the distributing surface that is opposite the bottom in the use position. These fasteners are used to hold the spray strip. With the help of the fasteners provided on the top flat side of the distributing surface, the spray strip can be fastened securely to the cleaning device, but still be easy to remove.

[0014] If the spray strip has a round outer perimeter, it is advantageous if the spray strip supports a connection piece oriented perpendicular with respect to the length of the strip that is removably held in a rotational lock provided at the distributing surface. If the connection piece, which is connected to the outlet line, is held in its associated rotational lock, the outlet openings provided at the spray strip will always have the desired direction toward the surface to be cleaned, and cannot be inadvertently rotated from this position.

[0015] A further aspect according to the invention that is of patentable importance provides that a profile strip be removably connected to the cleaning device, a section of which is designed as a spray strip with a tubular cross section, and with a formed section thereof having a cross section in the form of a strip fastener. A profile strip of this type with an integrated spray strip can be manufactured very easily. Since a strip fastener is also formed onto this profile strip, it is considerably easier to removably fasten the spray strip/profile strip. At the same time, this guarantees that the direction of the outlet openings provided at the spray strip are always correctly positioned.

[0016] To also be able to use the cleaning device according to the invention as a cleaning mop, it is advantageous if at least one profile strip can be removably connected to at least two opposite sides of the distributing surface to facilitate the removable fastening of a cleaning sponge, cleaning cloth, cleaning fabric or similar cleaning rag. Each of these profile strips contains a strip fastener in part of its cross section. At least one of the profile strips held on at least one side of the distributing surface is designed as a spray strip in part of its cross section. In this embodiment of the invention, the cleaning rag is stretched and securely held between at least two profile strips that are located on opposite sides of the distributing surface. Of these profile strips, at least one of the strips, held on at least one side of the distributing surface, is at the same time designed as a spray strip in part of its cross section.

[0017] To be able to fasten the profile strips in a simple manner to the distributing surface of the cleaning device, it is advantageous if the profile strips connect removably to the edge of the distributing surface.

[0018] A connection piece can be formed onto the spray strip of at least one profile strip, said piece extending perpendicular to the length of the strip. This connection piece is connected to the fluid line. However, it is also possible that the profile strip containing the spray strip is closed on at least one of its ends and has a line connection for the fluid line at the other. Thus, for example, the spray strip can be closed at one end by inserting a plug into its inside cross section, whereas at the opposite end of this spray strip a line connection is inserted that is connected to the fluid line.

[0019] The cleaning rag can be held particularly securely at the profile strips and can be removed again easily from them as necessary if the profile strips are connected removably to the cleaning rag by means of a hook-and-loop connection.

[0020] In this case, a preferred embodiment of the invention provides that this hook-and-loop connection to the cleaning rag is provided at a section of the profile strip facing the bottom that grasps the edge of the distributing surface and that is designed as a fastener.

[0021] So that the spray strip is not in the way of the cleaning rag and so that the outlet openings provided at the spray strip are not inadvertently blocked off by the cleaning rag, it is advantageous if the spray strip, which is provided on at least one profile strip, is designed as a section of the profile strip located on the side of the distributing surface opposite the bottom.

[0022] The expense associated with the manufacture of the cleaning device according to the invention is further reduced if at least the profile strip containing the spray strip is manufactured as a drawn plastic profile or plastic extrusion part.

[0023] To be able to apply the cleaning or disinfectant fluid nicely onto the surface to be cleaned using the spray strip provided on the cleaning device according to the invention, it is advantageous if the longitudinal axis of the outlet

openings provided in the spray strip is at an angle of 10° to 60° with respect to the bottom flat side of the distributing surface.

[0024] BRIEF DESCRIPTION OF THE DRAWING

[0025] The invention is described in more detail below on the basis of a preferred exemplary embodiment shown in the single drawing Figure.

[0026] DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0027] In the single figure a cleaning device 1 is shown near its distributing surface 2. The distributing surface 2 provided on the cleaning device 1 can be used to simply and quickly apply a cleaning or disinfectant fluid onto a surface to be cleaned.

[0028] To apply the cleaning or disinfectant fluid, the cleaning device 1 has a fluid reservoir, which is not shown, that is connected via a fluid line to a fluid outlet. In order to apply the cleaning fluid onto the surface to be cleaned in not just a circular pattern, but in a linear or even surface pattern, the fluid outlet is designed as a spray strip 3 that has numerous outlet openings 4 distributed along the length of the strip.

[0029] The spray strip 3 is designed as a tubular section of a profile strip 5. This profile strip has a strip fastener 6 formed in another section that in this example is approximately U-shaped in cross section. The profile strip 5 and its integrated spray strip 3 can be clipped onto the edge of the distributing surface 2 of the cleaning device by means of this strip fastener 6.

[0030] A profile strip can also be removably fastened to the edge on the opposite side of the distributing surface, which is not shown here however, although the profile strip does not necessarily have to be likewise designed with a spray strip.

[0031] A cleaning rag can be held fixed between the profile strips 5 provided at opposite sides of the distributing surface 2. This rag can be saturated with the cleaning or disinfectant fluid to facilitate the cleaning process. This cleaning rag is preferred to be fastened to the profile strips 5 by means of a hook-and-loop connection. As the profile strip 5 shows here, the profile strip 5 has a number of hooks 7 on the bottom that cooperate with a loop fabric on the cleaning rag.

[0032] As the figure clearly shows, the spray strip 3 provided on at least one profile strip 5 is designed as a section of the profile strip that is located on the side of the distributing surface opposite the bottom. The hooks 7 of the hook-and-loop connection are provided on a section of the profile strip 5 designed as a fastener that grasps the edge of the distributing surface 2.

[0033] Since the spray strip is manufactured in this case as a drawn plastic profile or plastic extrusion part, the cleaning device 1 shown here can be manufactured inexpensively.

[0034] The figure plainly shows that the profile strip 5 manufactured as a plastic extrusion part and that contains the spray strip 3 can be closed at one end, whereas a line connection is provided at the other end of this profile strip 5 for the fluid line. The plugs that close one end and the line connection located at the other end of the profile strips can be inserted in a cork-like fashion into the inside cross section of the spray strip.

[0035] It is also possible however that the spray strip 3 – as is the case here – is connected to a connection piece 8 that is connected to the fluid line and that feeds the spray strip 3.

[0036] The figure indicates that the longitudinal axis of the outlet openings 4 provided in the spray strip 3 is directed at an angle of 30° with respect to the flat bottom side of the distributing surface 2. This guarantees that the outlet openings 4 of the spray strip 3, which acts as the fluid outlet and are located on the side of the distributing surface 2 opposite the bottom, are always directed at the surface to be cleaned.

[0037] The cleaning device 1, which can also be connected to a broom handle, can be manufactured inexpensively and facilitates the quick and comfortable distribution of the cleaning or disinfectant fluid located in a fluid reservoir.